

## Assignment

Date \_\_\_\_\_ Period \_\_\_\_\_

Solve each equation. Remember to check for extraneous solutions.

1)  $\frac{1}{x+6} + \frac{1}{x+3} = \frac{5}{x+3}$

2)  $\frac{1}{m+1} + 1 = \frac{3}{m+1}$

3)  $\frac{1}{x+1} = \frac{5}{x+1} - 1$

4)  $\frac{2}{a-8} - \frac{1}{a^2-9a+8} = \frac{4}{a^2-9a+8}$

5)  $\frac{8}{x^2-10x+16} = \frac{1}{x^2-10x+16} + \frac{1}{x-8}$

6)  $\frac{4}{x^2-5x} = \frac{1}{x^2-5x} - \frac{6}{x}$

7)  $\frac{5}{b+4} = \frac{1}{b+4} + 1$

8)  $\frac{1}{n^2+2n-8} = \frac{8}{n^2+2n-8} - \frac{1}{n+4}$

9)  $\frac{1}{7x} + 1 = \frac{x-6}{7x}$

10)  $\frac{5}{x^2-5x} = \frac{1}{x^2-5x} - \frac{1}{x-5}$

11)  $\frac{3}{4x+32} = \frac{1}{4x+32} + \frac{x}{2x+16}$

12)  $\frac{28n+35}{5n} = 1 - \frac{n-2}{5n}$

13)  $\frac{3}{p^2-8p} + \frac{3}{p-8} = \frac{1}{p-8}$

14)  $\frac{1}{2n} + \frac{4}{n^2-3n} = \frac{1}{n^2-3n}$

15)  $1 = \frac{1}{4p-8} + \frac{3p-2}{2p-4}$

16)  $\frac{4}{n^2-n} = \frac{1}{n} + \frac{1}{n^2-n}$

17)  $3 + \frac{n-5}{n+5} = \frac{8n-32}{n+5}$

18)  $1 = \frac{n-2}{2n} - \frac{7}{2n}$

19)  $\frac{5}{x+8} = \frac{1}{x+8} - 7$

20)  $\frac{1}{x-6} + \frac{x+6}{x^2-6x} = \frac{7}{x}$

## Assignment

Date \_\_\_\_\_ Period \_\_\_\_\_

- 1) When you reverse the digits in a certain two-digit number you increase its value by 18. What is the number if the sum of its digits is 8?
- 2) Jack and Nicole are selling wrapping paper for a school fundraiser. Customers can buy rolls of plain wrapping paper and rolls of shiny wrapping paper. Jack sold 3 rolls of plain wrapping paper and 6 rolls of shiny wrapping paper for a total of \$168. Nicole sold 6 rolls of plain wrapping paper and 9 rolls of shiny wrapping paper for a total of \$279. What is the cost each of one roll of plain wrapping paper and one roll of shiny wrapping paper?
- 3) The school that Lea goes to is selling tickets to a fall musical. On the first day of ticket sales the school sold 10 adult tickets and 12 child tickets for a total of \$296. The school took in \$80 on the second day by selling 2 adult tickets and 4 child tickets. What is the price each of one adult ticket and one child ticket?
- 4) Kristin and Emily each improved their yards by planting grass sod and ornamental grass. They bought their supplies from the same store. Kristin spent \$42 on 3 ft<sup>2</sup> of grass sod and 3 bunches of ornamental grass. Emily spent \$128 on 12 ft<sup>2</sup> of grass sod and 2 bunches of ornamental grass. What is the cost of one ft<sup>2</sup> of grass sod and the cost of one bunch of ornamental grass?
- 5) Daniel's school is selling tickets to a choral performance. On the first day of ticket sales the school sold 12 senior citizen tickets and 12 student tickets for a total of \$276. The school took in \$93 on the second day by selling 5 senior citizen tickets and 3 student tickets. What is the price each of one senior citizen ticket and one student ticket?
- 6) Wilbur's school is selling tickets to the annual dance competition. On the first day of ticket sales the school sold 1 adult ticket and 2 child tickets for a total of \$31. The school took in \$96 on the second day by selling 7 adult tickets and 3 child tickets. Find the price of an adult ticket and the price of a child ticket.
- 7) A boat traveled 80 miles downstream and back. The trip downstream took 5 hours. The trip back took 10 hours. Find the speed of the boat in still water and the speed of the current.
- 8) James' school is selling tickets to a spring musical. On the first day of ticket sales the school sold 4 adult tickets and 10 student tickets for a total of \$166. The school took in \$167 on the second day by selling 8 adult tickets and 5 student tickets. What is the price each of one adult ticket and one student ticket?
- 9) The sum of the digits of a certain two-digit number is 6. Reversing its digits decreases the number by 36. Find the number.
- 10) A boat traveled 360 miles downstream and back. The trip downstream took 9 hours. The trip back took 18 hours. Find the speed of the boat in still water and the speed of the current.

- 11) A boat traveled 240 miles downstream and back. The trip downstream took 6 hours. The trip back took 12 hours. What is the speed of the boat in still water? What is the speed of the current?
- 12) Huong's school is selling tickets to the annual talent show. On the first day of ticket sales the school sold 12 senior citizen tickets and 9 student tickets for a total of \$234. The school took in \$111 on the second day by selling 3 senior citizen tickets and 11 student tickets. What is the price each of one senior citizen ticket and one student ticket?
- 13) When you reverse the digits in a certain two-digit number you increase its value by 9. What is the number if the sum of its digits is 7?
- 14) Daniel and Norachai are selling cheesecakes for a school fundraiser. Customers can buy French silk cheesecakes and strawberry cheesecakes. Daniel sold 3 French silk cheesecakes and 3 strawberry cheesecakes for a total of \$96. Norachai sold 12 French silk cheesecakes and 1 strawberry cheesecake for a total of \$164. Find the cost each of one French silk cheesecake and one strawberry cheesecake.
- 15) The school that Joe goes to is selling tickets to a fall musical. On the first day of ticket sales the school sold 6 senior citizen tickets and 4 student tickets for a total of \$56. The school took in \$58 on the second day by selling 8 senior citizen tickets and 2 student tickets. What is the price each of one senior citizen ticket and one student ticket?
- 16) The county fair is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 5 vans and 12 buses with 765 students. High School B rented and filled 1 van and 2 buses with 129 students. Every van had the same number of students in it as did the buses. How many students can a van carry? How many students can a bus carry?
- 17) DeShawn and Jasmine each improved their yards by planting grass sod and geraniums. They bought their supplies from the same store. DeShawn spent \$69 on 8 ft<sup>2</sup> of grass sod and 5 geraniums. Jasmine spent \$69 on 2 ft<sup>2</sup> of grass sod and 7 geraniums. What is the cost of one ft<sup>2</sup> of grass sod and the cost of one geranium?
- 18) Shreya and Emily are selling cheesecakes for a school fundraiser. Customers can buy pecan cheesecakes and strawberry cheesecakes. Shreya sold 9 pecan cheesecakes and 8 strawberry cheesecakes for a total of \$124. Emily sold 5 pecan cheesecakes and 4 strawberry cheesecakes for a total of \$64. What is the cost each of one pecan cheesecake and one strawberry cheesecake?
- 19) A plane traveled 432 miles to Chicago and back. The trip there was with the wind. It took 4 hours. The trip back was into the wind. The trip back took 8 hours. What is the speed of the plane in still air? What is the speed of the wind?
- 20) Kathryn's school is selling tickets to a fall musical. On the first day of ticket sales the school sold 11 senior citizen tickets and 9 student tickets for a total of \$161. The school took in \$17 on the second day by selling 1 senior citizen ticket and 1 student ticket. Find the price of a senior citizen ticket and the price of a student ticket.

## Assignment

Date \_\_\_\_\_ Period \_\_\_\_\_

Factor each completely.

1)  $3x^2 + 22x - 16$

2)  $3r^2 + 2r$

3)  $7b^3 + 8b^2$

4)  $3r^2 - 25r - 50$

5)  $5x^3 - 8x^2 - 4x$

6)  $35p^2 - 125p - 250$

7)  $18v^3 - 60v^2 + 42v$

8)  $7b^3 - 78b^2 + 80b$

9)  $21n^3 - 219n^2 + 270n$

10)  $2n^3 + 9n^2$

11)  $4x^3 - x^2 - 18x$

12)  $6k^2 - 31k + 18$

13)  $10v^3 - 61v^2 + 72v$

14)  $10n^3 + 43n^2 + 12n$

15)  $4k^2 - 81$

16)  $9n^2 + 45n + 50$

17)  $8b^3 + 24b^2 - 14b$

18)  $45n^4 - 220n^3 + 160n^2$

19)  $8x^3 + 26x^2 - 45x$

20)  $50k^3 + 145k^2 - 105k$

21)  $x^4 - 5x^2 - 36$

22)  $5x^4 - 50x^2 + 80$

23)  $3u^4 - 36u^2 + 81$

24)  $a^4 - a^2 - 90$

25)  $3a^4 - 33a^2 + 30$

26)  $2u^4 - 4u^2 - 96$

27)  $m^4 - 9$

28)  $3m^4 + 6m^2 - 9$

29)  $5m^4 - 180$

30)  $a^4 - a^2 - 2$